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October 26, 2006 (Revised)

Mr. Thure Stedt
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7869 Convoy Court
San Diego, CA 92111

RE: ACOUSTICAL SITE ASSESSMENT
SAINT ADELAIDE CATHOLIC CHURCH - P04-056 – (SAN DIEGO, CA)
ISE REPORT #05-127

Dear Mr. Stedt:

At your request, Investigative Science and Engineering (ISE) have performed an acoustical site assessment of the proposed St. Adelaide Catholic Church project located in San Diego, California. The results of that survey, as well as predicted future noise levels at the project site, are presented in this letter report.

INTRODUCTION AND DEFINITIONS

Existing Site Characterization

The subject property is a 5.13-acre site at the northeast corner of the intersection of Custer Road and Sheridan Road in the Campo Valley, just east of SR94 and the old San Diego & Arizona Eastern Railroad line, which is operated briefly on the weekends by the San Diego Railroad Museum. Access to the project site is by Sheridan Road (refer to Figure 1).

The project site currently resides as mostly undeveloped open space. The proposed project and all surrounding land uses are designated as RR (rural residential). Elevations on the entire property slope gently from the southeast from 2,639 feet above mean sea level (MSL) to the northwest elevation of 2,594 MSL. A satellite photograph of the project site is shown in Figures 2 on Page 8 of this report.

Project Description

This 5.13 acre site is to be used for the new location of the St. Adelaide Catholic Church. There will be three buildings, built over three phases. Water and sewer service are provided by the County of San Diego. Access is by Sheridan Road.

Total proposed building area is 22,804 square feet (including trash enclosure) plus 2,421 covered arcade patio. Amenities include 136 parking spaces, a 10,000 square foot playground, and extensive landscaping.

Phase I: MULTI-PURPOSE ROOM/WORSHIP SPACE

The first phase will include the total infrastructure, parking (136 spaces), landscaping, water/sewer hookups and electrical power. It will also include the construction of the one story 5,656 square foot multi-purpose room, a 1,786 square foot covered arcade and a 180 square foot trash enclosure. The multi-purpose room will be large enough to serve as a temporary worship space as well as to function as a meeting hall. It will include a kitchenette, a small office, storage for tables and chairs, toilets, janitor and electrical service room. Barbecues will be provided in conjunction with the kitchenette. Outdoor dining is not contemplated.

There will be one Mass in the multi-use room on Saturday evening and one Mass in the multi-use room on Sunday morning. The largest gathering will be 250 people Sunday morning between 9:30 a.m. and noon which will generate a parking demand for approximately 86 cars. This is based upon a survey of vehicle occupancy indicating 2.9 persons per vehicle.

If the use of the church or the parking approaches capacity additional masses will be scheduled such that the parking and occupancy of the building stay within the designed capacity.

In addition there will be five weekdays when the multi-use room will be used for Mass on our Holy Days of Obligation. These additional masses will be in the morning except for First Friday mass in the evening. The building will be used from 4:30 pm-7:30 pm on that day. This will involve around 100 people. These Masses will be transferred to the Sanctuary upon its construction.

Once a month Saturday events may be planned for fundraisers, gatherings and presentations. A fundraiser may generate approximately125-175 people. These events will generate a parking demand for approximately 88 vehicles based upon a vehicle occupancy of 2 per vehicle. Catechism classes will be held once a week during the school year in the evening, usually Wednesdays. In addition on the first Tuesday of each month there is an evening meeting from 6 p.m. until 8:30 p.m.

The meeting hall will be 25’ 11” tall. The exterior will be off white or beige stucco. The roofing material will be muted red terracotta tile and the trellis will be stained brown.

Phase II: NEW SANCTUARY

The second phase, construction and use of a new 4,809 square foot sanctuary and 635 square foot covered lobby, will be within five years of the completion of the first phase. This building will be the main worship site. It will have seating for approximately 300 people and will include all of the necessary elements of a Catholic church: Altar,

presider area, ambo, vesting room, lobby, sacristy, toilets, offices, counseling rooms and a sound/lighting room.

There will be one Mass Saturday evening between 4:30 p.m. and 7 p.m. and two on Sunday morning between 9:30 and noon. The occupancy of 300 people will generate a parking demand for approximately 103 vehicles, based upon a vehicle occupancy of 2.9 persons per vehicle.

There will be catechism classes on Wednesday evenings during the school year that will generate approximately 60 car trips and 80 people, including students and teachers. Once a month Saturday events may be planned for fundraisers, gatherings and presentations. A fundraiser may generate approximately125-175 people. These events will generate a parking demand for approximately 88 vehicles based upon a vehicle occupancy of 2 per vehicle.

If the use of the church or the parking approaches capacity additional masses will be scheduled such that the parking and occupancy of the building stay within the designed capacity.

The height to the ridge of the roof will be 30' 10". The height to the top of the steeple will be 41'. The height to the top of the cross atop the steeple will be 47' 10". The construction materials and color will be the same as the multi purpose hall.

Phase III: EDUCATION BUILDING

The third phase will be the building of a 12,159 square foot school facility. This will be built after the sanctuary, probably within ten years of the start of construction. This will be an elementary school, K-6th. It will also be one-story building similar to the sanctuary. The school structure will include administration, teacher offices, lounge, toilets and storage, classrooms, janitorial and electrical rooms.

There will be nine classrooms of 25 students each. A turf play yard of 10,000 square feet is included. The use will be the normal school year of September-June and will create approximately 270 people visits a day. Normal school hours will cover from 7 a.m. until 5 p.m. with parent/teacher meetings, assemblies, sporting events and some after school activities extending the hours into the evenings. The required yard space, security, first aid and support structures will all be a part of this phase. The school day will include a 40-minute outdoor recess period in the morning, a 40-minute recess period in the afternoon and a one-hour lunch period. The recess periods will be split such that only half of the students will be at recess at any one time,

The phase III parking demands will be divided between the weekend church services and weekday school requirements. The greatest phase III parking demands will occur during the weekend church services of up to 103 vehicles based upon a maximum attendance of 300 people as described under phase II. The weekday school

parking requirements are estimated at approximately 30 parking spaces based upon the estimated number of teachers, staff, and volunteers.

The timing of the school construction will depend upon the demand for it and the finances available to pay for not only the construction costs but also the ongoing administration and upkeep.

The height of the school building will be 21' 10". The construction materials and colors will be the same as the other structures.

THE SITE

The subject property is a 5.13-acre site at the northeast corner of the intersection of Custer Road and Sheridan Road in the Campo Valley, just east of SR94 and the old San Diego & Arizona Eastern Railroad line.

The property shows obvious signs of relatively recent use shown by building foundations and debris. A County of San Diego sewer line transects the property.

The site has been graded in the past, as can be seen from the topo map generated for this development. A slope analysis has been provided. There are no Resource Protection Ordinance "steep slopes" on the site. The property slopes gently from the southeast, elevation 2,639 msl, to the northwest elevation 2,594' msl.

MECHANICAL EQUIPMENT

Mechanical equipment consisting of ground mounted heating/cooling units will be provided. The equipment will be screened and enclosed behind a masonry wall finished to match the building. Heights for the masonry enclosures are described on Page 23 of this report. A solid metal gate shall be installed with each bank of mechanical equipment. The proposed equipment consists of:

Multi-purpose Hall:	One twenty-ton condensing unit and one 7.5-ton condensing unit or two ten-ton condensing units and one 7.5 ton condensing unit.
Sanctuary:	two 8-ton condensing units and one 6.5-ton condensing unit.
School:	Nine four-ton condensing units and one 10-ton condensing unit.

PHASE	EQUIPMENT
I. Multi-purpose Hall	One twenty-ton condensing unit and one 7.5-ton condensing unit or two ten-ton condensing units and one 7.5 ton condensing unit.
II. Sanctuary	Two 8-ton condensing units and one 6.5-ton condensing unit.
III. School	Nine four-ton condensing units and one 10-ton condensing unit.

PARKING SUMMARY

PROJECT PHASE	MAXIMUM ESTIMATED PARKING DEMAND BASED ON EXISTING VEHICLE OCCUPANCE (1)
Phase I	
Weekend Mass (Sat & Sun)	86 Parking Spaces
Weekend Fundraiser (once a month)	88 Parking Spaces (Max)
Weekday Evening Catechism Classes (once a week)	60 Parking Spaces
Phase II	
Weekend Mass (Sat & Sun)	103 Parking Spaces (Max)
Weekend Fundraiser (once a month)	88 Parking Spaces
Weekday Evening Catechism Classes (once a week)	60 Parking Spaces
Phase III	
Weekend Mass (Sat & Sun)	103 Parking Spaces (Max)
Weekend Fundraiser (once a month)	88 Parking Spaces
Weekday Evening Catechism Classes (once a week)	60 Parking Spaces
Weekday School	30 Parking Spaces

A vehicle occupancy of 2.9 is from actual Church records that document the number of people in each family and the number of vehicles used to attend service.

CHURCH PARKING OCCUPANCY DATA

St. Adelaide, Campo

FAMILY #	*# IN FAMILY*		*# CAR TRIP*	
	Adults	Children		
#1	2		1	
2	1		1	
3	2	7	2	
4	2	1	1	This is the first 40 of 85
5	2		1	registered families and is an
6	2		1	educated guess of the number of
7	2	3	1	people per car trip on Sunday

8	2		1	for Mass in Campo
9	2		1	
10	2	1	1	Total # of people is 118
11	1		1	Total car trips is 41
12	1		1	Occupancy = people/cars
13	2	4	1	= 118/41
14	2	3	1	= **2.9 people/car**
15	1	3	1	
16	1		1	
17	2	3	1	
18	2		1	
19	2		1	
20	1		1	
21	2		1	
22	1	1	1	
23	1		1	
24	2		1	
25	2	1	1	
26	2		1	
27	1	1	1	
28	2	3	1	
29	1		1	
30	2		1	
31	2	1	1	
32	2	1	1	
33	2		1	
34	2		1	
35	1	4	1	
36	2	3	1	
37	2	1	1	
38	2	4	1	
39	2		1	
40	2	4	1	

THE VICINITY

The immediate vicinity includes scattered residential uses on large lots and a new subdivision, County Tract 4554, of several hundred new homes on urban sized lots. Additionally, the neighborhood includes a sizeable INS facility, and Rancho del Campo, and a small commercial center at Cameron's Corners, and the well known train museum and a truck museum. The area, during WW2 had a prisoner of war camp housing Italians, and earlier, a US Army encampment.

FIGURE 1: Project Vicinity Maps – St. Adelaide Catholic Church (ISE 12/05)

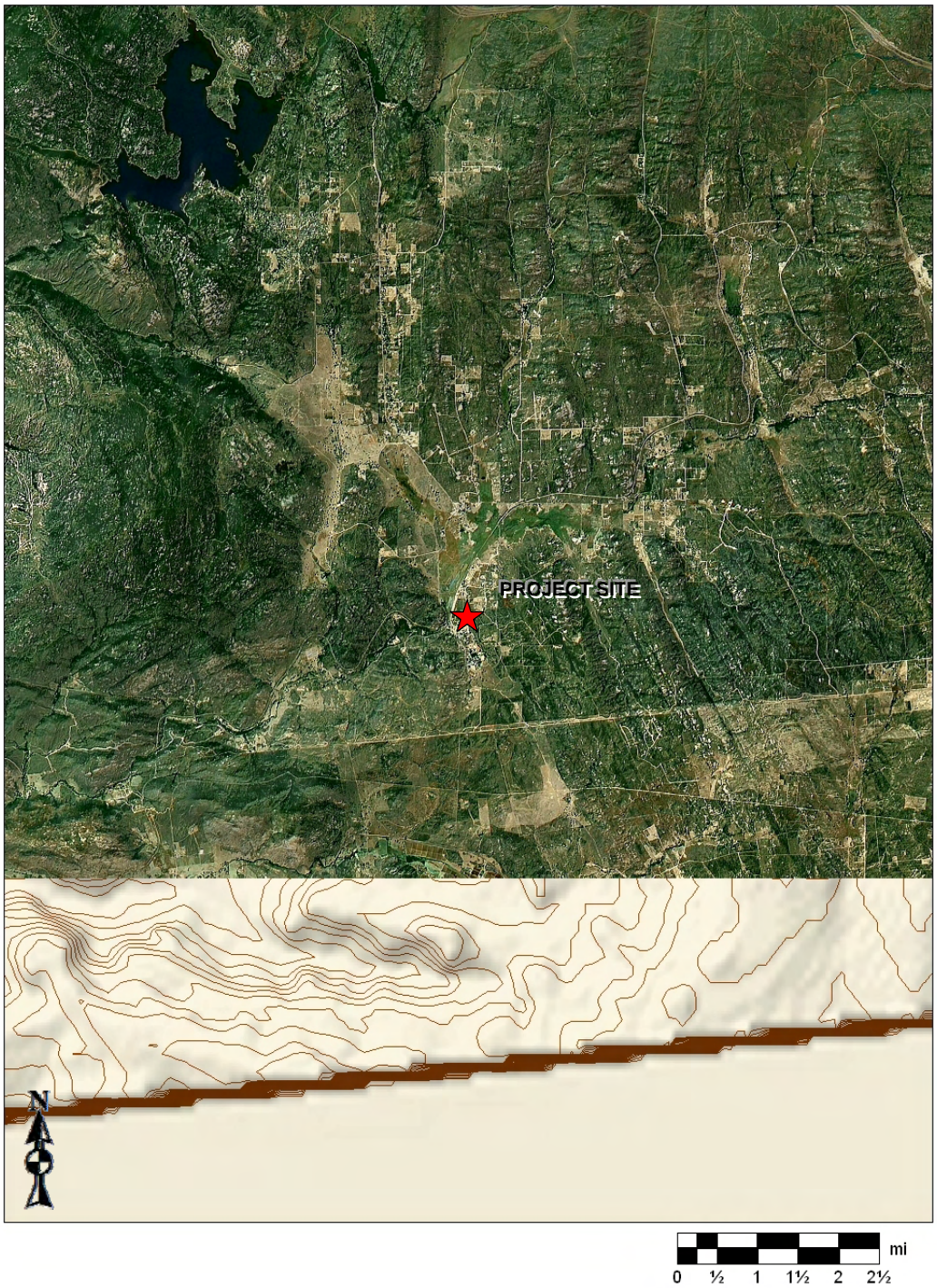


FIGURE 2: Project Site Vicinity Aerial Photograph – (Delorme 2005)

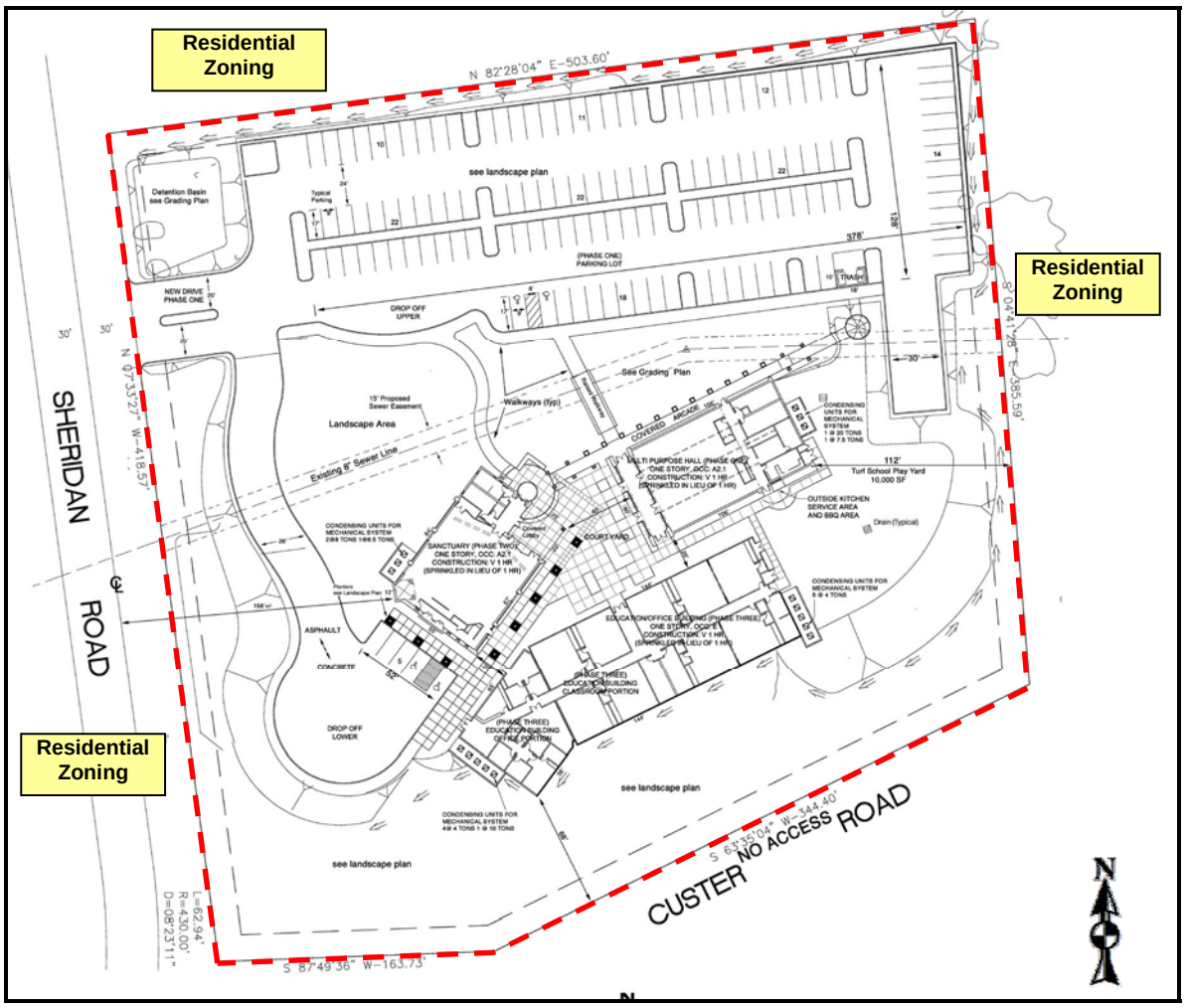


FIGURE 3: Proposed St. Adelaide Church Site Plan (CCBG Architects, Inc., 11/04)

Acoustical Definitions

Sound waves are linear mechanical waves. They can be propagated in solids, liquids, and gases. The material transmitting such a wave oscillates in the direction of propagation of the wave itself. Sound waves originate from some sort of vibrating surface. Whether this surface is the vibrating string of a violin or a person's vocal cords, a vibrating column of air from an organ or clarinet, or a vibrating panel from a loudspeaker, drum, or aircraft, the sound waves generated are all similar. All of these vibrating elements alternatively compress the surrounding air on a forward movement and expand it on a backward movement.

There is a large range of frequencies within which linear waves can be generated, sound waves being confined to the frequency range that can stimulate the auditory organs to the sensation of hearing. For humans this range is from about 20

Hertz (Hz or cycles per second) to about 20,000 Hz. The air transmits these frequency disturbances outward from the source of the wave. Sound waves, if unimpeded, will spread out in all directions from a source. Upon entering the auditory organs, these waves produce the sensation of sound. Waveforms that are approximately periodic or consist of a small number of periodic components can give rise to a pleasant sensation (assuming the intensity is not too high), for example, as in a musical composition. Noise, on the other hand, can be represented as a superposition of periodic waves with a large number of components.

Noise is generally defined as unwanted or annoying sound that is typically associated with human activity and which interferes with or disrupts normal activities. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise, the perceived importance of the noise and its appropriateness in the setting, the time of day, and the sensitivity of the individual hearing the sound.

Airborne sound is a rapid fluctuation of air pressure above and below atmospheric levels. The loudest sounds the human ear can hear conformably are approximately one trillion times the acoustic energy that the ear can barely detect. Because of this vast range, any attempt to represent the acoustic intensity of a particular sound on a linear scale becomes unwieldy. As a result, a logarithmic ratio originally conceived for radio work known as the decibel (dB) is commonly employed. A sound level of zero “0” dB is scaled such that it is defined as the threshold of human hearing and would be barely audible to a human of normal hearing under extremely quiet listening conditions. Such conditions can only be generated in anechoic or “dead rooms”. Typically, the quietest environmental conditions (extreme rural areas with extensive shielding) yield sound levels of approximately 20 decibels. Normal speech has a sound level of approximately 60 dB. Sound levels above 120 dB roughly correspond to the threshold of pain.

The minimum change in sound level that the human ear can detect is approximately 3 dB. A change in sound level of 10 dB is usually perceived by the average person as a doubling (or halving) of the sounds loudness. A change in sound level of 10 dB actually represents an approximately 90 percent change in the sound intensity, but only about a 50 percent change in the perceived loudness. This is due to the nonlinear response of the human ear to sound.

As mentioned above, most of the sounds we hear in the environment do not consist of a single frequency, but rather a broad band of frequencies differing in sound level. The intensities of each frequency add to generate the sound we hear. The method commonly used to quantify environmental sounds consists of determining all of the frequencies of a sound according to a weighting system that reflects the nonlinear response characteristics of the human ear. This is called "A" weighting, and the decibel level measured is called the A-weighted sound level (or dBA). In practice, the level of a noise source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA curve.

Although the A-weighted sound level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of sounds from distant sources that create a relatively steady background noise in which no particular source is identifiable. For this type of noise, a single descriptor called the Leq (or equivalent sound level) is used. Leq is the energy-mean A-weighted sound level during a measured time interval. It is the 'equivalent' constant sound level that would have to be produced by a given source to equal the average of the fluctuating level measured. For most acoustical studies, the monitoring interval is generally taken as one-hour and is abbreviated *Leq-h*.

To describe the time-varying character of environmental noise, the statistical noise descriptors L10, L50, and L90 are commonly used. They are the noise levels equaled or exceeded during 10 percent, 50 percent, and 90 percent of a stated time. Sound levels associated with the L10 typically describe transient or short-term events, while levels associated with the L90 describe the steady state (or most prevalent) noise conditions. In addition, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the maximum and minimum measured sound level (Lmax and Lmin) indicators. The Lmin value obtained for a particular monitoring location is often called the *acoustic floor* for that location.

Another sound measure employed by the State of California and the County of San Diego is known as the Community Noise Equivalence Level (CNEL) is defined as the "A" weighted average sound level for a 24-hour day. It is calculated by adding a 5-decibel penalty to sound levels in the evening (7:00 p.m. to 10:00 p.m.), and a 10-decibel penalty to sound levels in the night (10:00 p.m. to 7:00 a.m.) to compensate for the increased sensitivity to noise during the quieter evening and nighttime hours.

APPLICABLE SIGNIFICANCE CRITERIA

County of San Diego Noise Regulations

Transportation noise levels in the County of San Diego are governed under the Noise Element of the County's General Plan. The relevant sections of the Noise Element are cited below. Exterior noise standards are typically applied to areas within a proposed development that would be classified as "usable exterior space", such as rear and some side yards.

1. Whenever possible, development in San Diego County should be planned and constructed so that noise sensitive areas are not subject to noise levels in excess if 55 dBA CNEL.
2. Whenever it appears that new development will result in any (existing or future) noise sensitive areas being subjected to noise levels in excess of 60 dBA CNEL or greater, an acoustical study should be required.
3. If the acoustical study shows that noise levels at any noise sensitive areas will exceed 60 dBA CNEL, the development should not be approved unless the following findings are made:

a) Modifications to the development have been or will be made which reduce the exterior noise level below 60 dBA CNEL; or,

b) If, with the current noise abatement technology, it is infeasible to reduce the exterior CNEL to 60 dBA, then modifications to the development will be made which reduce interior noise below a CNEL equal to 45 dBA. Particular attention shall be given to noise sensitive interior spaces such as bedrooms; and,

c) If finding 'b' above is made, a further finding will be made that there are specifically identified overriding social or economic considerations which warrant approval of the development without modifications as described in 'a' above.

4) If the acoustical study shows that the noise levels at any noise sensitive areas will exceed 75 dBA CNEL; the development should not be approved.

5) Interior noise levels should not exceed 45 dBA CNEL within any habitable living space of any residential unit.

6) For the rooms in "Noise Sensitive Areas", which are usually occupied only a part of the day (schools, libraries, or similar, the interior one-hour average sound level, due to noise outside, should not exceed 50 decibels (dBA) *(Source: P 04-056 County Comment Letter, SDCDPLU 5/06)*

Additionally, in urbanized residential areas with an existing CNEL less than 60 dBA, the increase from the project is potentially significant whenever existing noise sensitive areas exceed 60 dBA CNEL. With an existing CNEL of 60 dBA or more, a net project related increase of 3 or more dBA CNEL would be considered potentially significant.

Operational Noise Standards

The San Diego County Noise Ordinance Section 36.404 governs fixed source and/or operational noise. The applicable sound levels are a function of the time of day and the land use zone. Sound levels are measured at the boundary of the property containing the noise source. The relevant limits are given below in Table 1. In the case where two adjacent property lines differ in zoning, the applicable threshold would be the arithmetic average of the two standards.

The proposed Saint Adelaide Church development is zoned RR (Rural Residential) and is consistent with the surrounding residential land uses of the area. Thus, the standard would be 50.0 dBA Leq-h during the hours of 7 a.m. to 10 p.m. and 45.0 dBA Leq-h during the hours of 10 p.m. to 7 a.m.

State of California CCR Title 24

The California Code of Regulations (CCR), Title 24, Noise Insulation Standards, states that multi-family dwellings, hotels, and motels located where the CNEL exceeds 60 dBA, must obtain an acoustical analysis showing that the proposed design will limit interior noise to less than 45 dBA CNEL. Interior noise standards are typically applied to sensitive areas within the structure where low noise levels are desirable (such as living rooms, dining rooms, bedrooms, and dens or studies).

TABLE 1: County of San Diego Noise Ordinance Limits

Land Use Zone	Time of Day	1-Hour Average Sound Level (dBA Leq)
R-S, R-D, R-R, R-MH, A-70, A-72, S-80, S-81, S-87, S-88, S-90, S-92, R-V, and R-U	**7 a.m. to 10 p.m.** **10 p.m. to 7 a.m.**	**50** **45**
R-R0, R-C, R-M, C-30, and S-86	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	55 50
S-94 and other commercial zones	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	60 55
M-50, M-52, and M-54	any time	70
S-82 and M-58	any time	70

Source: County of San Diego Noise Ordinance Section 36.404, 1981.

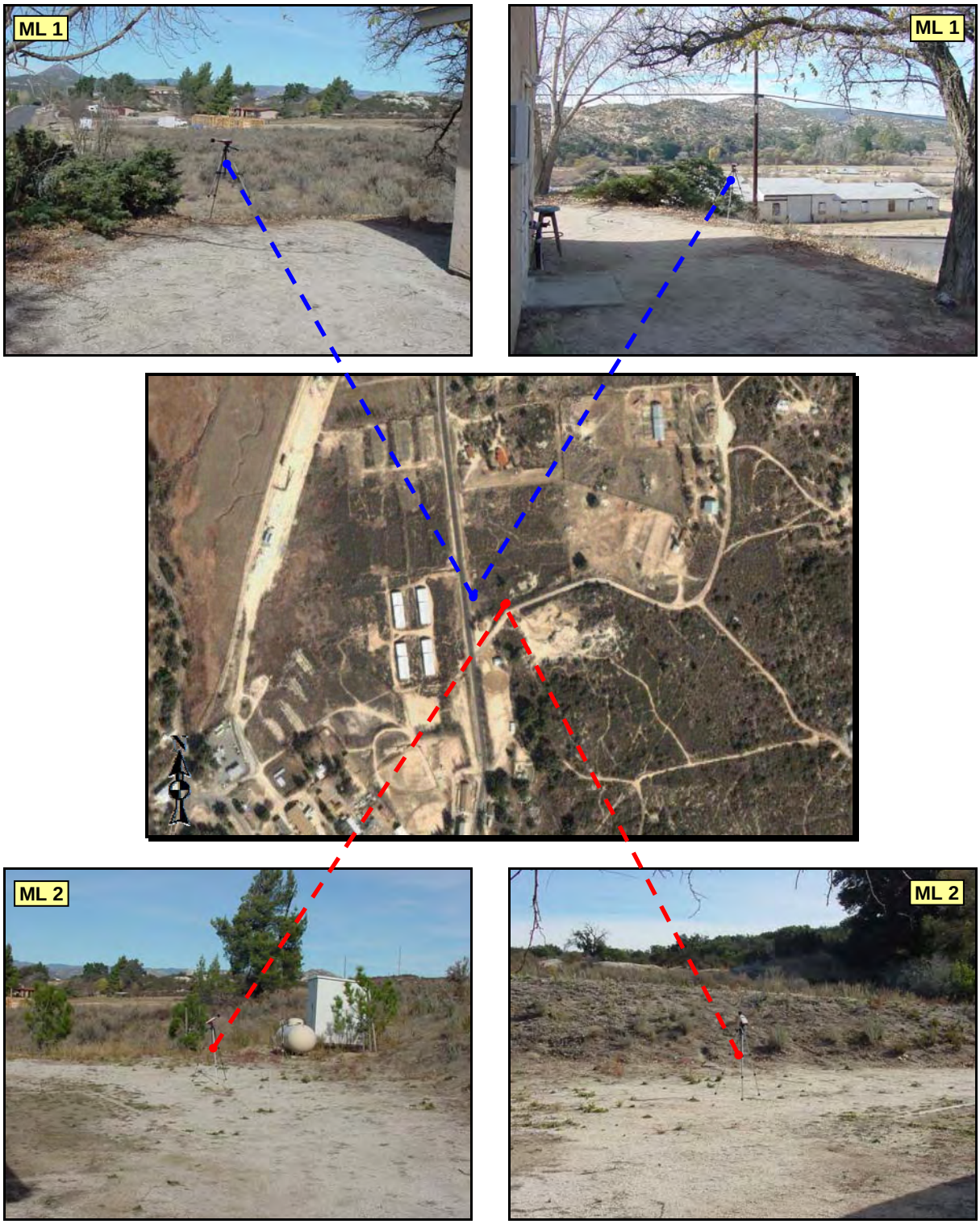
Worst-case noise levels, either existing or future, must be used for this determination. Future noise levels must be predicted at least ten years from the time of building permit application. The County of San Diego has adopted the CCR Title 24 standards, although for the purposes of environmental analysis, utilizes the interior threshold (above) from the Noise Element of the General Plan. Thus, for the purposes of analysis, the applicable exterior noise design threshold is 60 dBA CNEL. The applicable interior noise standard is 50 dBA Leq (dayuse conditions only).

ANALYSIS METHODOLOGY

Site Monitoring Procedure

Two Quest Model 2900 ANSI Type 2 integrating sound level meters were used as the data collection devices. The meters (denoted as ML's 1 and 2) were mounted to tripods approximately five feet above the ground and were placed at the project frontages having worst-case noise exposures. This was done in order to capture the background noise levels exposed to the proposed project site. The monitoring location is shown graphically in Figures 4a through -e.

The measurements were performed on December 2, 2005 at approximately 3:00 p.m. during normal afternoon traffic flow conditions. All equipment was calibrated before testing at ISE's acoustics and vibration laboratory to verify conformance with ANSI S1-4 1983 Type 2 and IEC 651 Type 2 standards.



Figures 4a through -e: Ambient Noise Monitoring Locations (ISE, 12/05)

Traffic Noise Impact Assessment Approach

The Caltrans Sound 32 Traffic Noise Prediction Model with California (CALVENO) noise emission factors (*based on FHWA RD-77-108 and FHWA/CA/TL-87/03 standards*) were used to calculate future onsite vehicular traffic noise levels. Model input included a digitized representation of Sheridan Road as well as any available local site topography, future Average Daily Traffic (ADT) volumes, vehicle mix, and receptor elevations. The roadway and site topography elevations were obtained from the data and plans provided by Cherry Engineering. Model output consisted of peak hour energy-mean A-weighted sound levels (or Leq-h) for each receptor examined.

Peak hour traffic values are calculated for a 10% traffic flow pattern and a 95/3/2 (automobiles/medium/heavy vehicles) percent mix in accordance with Caltrans traffic forecasting practices and the observed/predicted traffic distribution these types of roads. For peak hour traffic percentages between approximately 8 and 12 percent, the energy-mean A-weighted sound level is equivalent to the Community Noise Equivalent Level (CNEL). Outside this range, a maximum variance of up to two dBA occurs between Leq-h and CNEL.

Receptor elevations were considered five feet above the appropriate floor (pad) elevation and were taken near the center of the proposed project site. The model assumed a "hard" site sound propagation rule (i.e., a 3-dBA loss per doubling of distance from roadway to receiver). The model also considered the attenuation due to any slope topography adjacent to the project site. Second floor receptor areas were modeled at 15 feet above the respective pad elevation. The modeled receptor locations are identified in Figure 5 below and represent each affected outdoor area.

Railroad Noise Impact Assessment Approach

Railroad activities near the project site would be approximately 1,000 feet to the west and the nearest grade crossing would be approximately 1,450 feet to the southwest. The FTA General Noise Assessment Spreadsheet was used to determine the approximate sound levels at the project site. The land use category for this assessment was Category 3 (schools, libraries, and churches and active parks) as defined in the Federal Transit Administration – Resource information section (*Source: http://www.fta.dot.gov/transit_data_info/reports_publications/publications/environment/4805_5144_ENG_HTML.htm).*

Based on input parameters required by the FTA Noise Spreadsheet, ISE assumed a total of two diesel locomotive per hour with 30 cars attached traveling at speeds of 30 MPH. There would never be more than one pass by train event at a given time due to the single-track restrictions in the adjacent to the site.

Traffic Segment Impact Assessment Approach

The ISE *RoadNoise v1.0* traffic noise prediction model which is based upon Caltrans Sound 32 Traffic Noise Prediction Model with California (CALVENO) noise

emission factors (based on FHWA RD-77-108 and FHWA/CA/TL-87/03 standards) was used to calculate the increase in vehicular traffic noise levels along major servicing roadways due to the proposed development project. The model assumed a 'hard-site' propagation rule (i.e., 3.0 dBA loss per doubling of distance (DD) between source and receiver), thereby yielding a representative worst-case noise contour set.

Traffic noise model input included a tabulation of the major servicing roadway alignments identified in the aforementioned project traffic study as well as intersection turning movement and segment diagrams which were analytically reduced to peak hour traffic movements and ultimately daily segment ADT levels assuming a 10% flow pattern and a 95/3/2 mix. Modeled traffic speeds represent observed and future predicted average values.

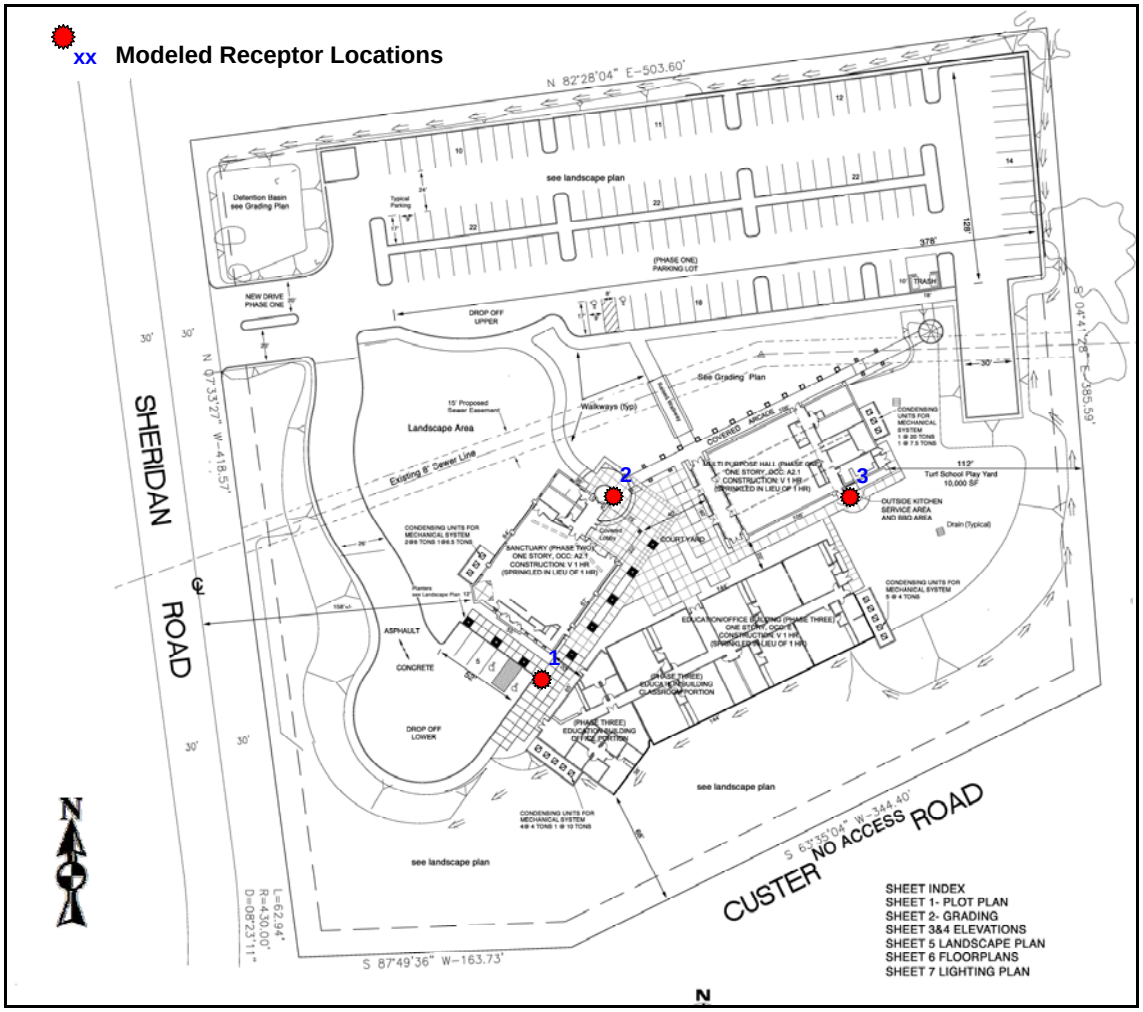


FIGURE 5: Proposed St. Adelaide Church Site Plan (CCBC Architects, Inc., 11/04)

Onsite Noise Assessment Approach

Onsite noise generation due to the proposed Saint Adelaide Church project would consist of, HVAC units, pedestrians walking across parking lots and activities associated with the play/meeting areas. ISE examined these possible noise events for consistency with the applicable property line standards identified in Table 1 above. Sources found to exceed the applicable standards would require appropriate mitigation measures.

FINDINGS / RECOMMENDATIONS

Existing Ambient Noise Conditions

Testing conditions during the monitoring period were sunny with an average barometric pressure reading of 29.86 in-Hg, an average easterly wind speed of 7 to 10 miles per hour (MPH), and an approximate mean temperature of 81 degrees Fahrenheit. The results of the sound level monitoring are shown below in Table 2. The values for the equivalent sound level (Leq), the maximum and minimum measured sound levels (Lmax and Lmin), and the statistical indicators L10, L50, and L90, are given for each monitoring location.

TABLE 2: Measured Ambient Sound Levels – Saint Adelaide Church

		1-Hour Noise Level Descriptors in dBA					
Site	**Start Time**	**Leq**	**Lmax**	**Lmin**	**L10**	**L50**	**L90**
ML 1	12:00 p.m.	52.9	71.7	38.9	53.8	46.6	42.1
ML 2	12:05 p.m.	45.6	59.1	36.1	48.9	42.5	38.6

Monitoring Locations:

- ML 1: Southwestern portion of project site facing Sheridan Road - GPS 32° 36.640' x 116° 28.183'. Meter located approximately 50' from roadway centerline.
- ML 2: Southeastern portion of project site facing Custer Road - GPS 32° 36.635 x 117° 02.172. Meter approximately 50 feet from roadway centerline.

Measurements performed by ISE on December 2, 2005. Estimated Position Error (EPE) = 15 feet.

Noise levels on site were found to be consistent with the observed community setting and topography. The value for the equivalent sound level (Leq-h) within the project site was found to range between 46 dBA and 53 dBA and was solely a function of separation distance from Sheridan Road. Background noise levels (i.e., L90 levels) were found to be significantly lower than their energy equivalent counterparts (e.g., Leq-h) which demonstrates the cyclic traffic activities along Sheridan Road. The acoustic floor for the site, as indicated by the Lmin metric, was found to range between 36 dBA and 39 dBA.

Future Traffic Noise Impacts

The primary source of future noise near the project site would be from the vehicular traffic along Sheridan Road. The roadways are expected to have a worst-case future traffic volume of 1,100 ADT, respectively (*Source: Draft Traffic Impact Analysis-St. Adelaide Catholic Church, LOS Engineering, Inc., 7-05*). This roadway is expected and projected to have posted speed limits of 40 MPH.

The results of the acoustical modeling are shown below in Table 3. The acoustical model results are provided as an attachment to this report. Based upon the findings, future exterior traffic noise levels would not exceed the County's 60-dBA CNEL noise threshold for outdoor usable areas. Thus, no exterior mitigation measures would be required.

TABLE 3: Acoustical Modeling Results – Saint Adelaide Church

Receptor #	Description	Ground Level (Unmitigated)
1	South of Sanctuary	42.0
2	West of Multi Purpose Hall	44.2
3	East of Edu. Building	34.8

The proposed projects driveway is expected to produce approximately 764 ADT weekdays and 412 ADT on Sundays. These ADTs are considered worst-case full build out projections. These traffic volumes would not be high enough to generate traffic impacts at either residential areas adjacent to the project site or at the church. The 60 CNEL contour is only approximately 4 feet form the center of the driveway, which is based upon a worst-case speed of 25 mph (the lowest allowable speed for modeling). In all actuality the projected speed for the driveway will be 10 mph, which will further reduce the 60 dBA CNEL noise contour.

Future Railway Noise Impacts

A secondary source of future noise near the project site would be from the railroad traffic approximately 1,000 feet to the west. The railroad could have a worst-case future trip volume of 16 pass-by trips per day at speed of 30 MPH. (*Source: County of San Diego Department of Planning and Land Use, 5/06*). These pass-by events are not expected to be greater then one train event within a one-hour period due to a single track configuration.

The results of the FTA Spreadsheet calculations are shown below in Table 4. Based upon the findings, future exterior traffic noise levels would not exceed the County's 60-dBA CNEL noise threshold for outdoor usable areas. Thus, no exterior mitigation measures would be required.

TABLE 4: FTA Calculation Spreadsheet – Saint Adelaide Church

Federal Transit Adminstration — **Copyright 1997, HMMH Inc.**
General Transit Noise Assessment — Sponsored by FTA contract #DTUM60-92-C-41008
Case: Saint Adelaide Church — Government users have unrestricted rights to this program

RESULTS			
Noise Source	**Leq - 1-hr (dB)**		
All Sources	45		
Source 1	43		
Source 2	42		
Source 3	0		

Enter noise receiver land use category below.

LAND USE CATEGORY	
Noise receiver land use category (1, 2 or 3)	3

Enter data for each noise source below - see reference list for source numbers.

NOISE SOURCE PARAMETERS					
Parameter	**Source 1**		**Source 2**		**Source 3**
Source Num.	Diesel Loco.	2	Comm. Rail Cars	3	
Dist. to receiver	distance (ft)	1000	distance (ft)	1000	
Noisiest Hour of	speed (mph)	30	speed (mph)	30	
Activity During	trains/hour	1	trains/hour	1	
Sensitive Hours	locos/train	2	cars/train	30	
Jointed Track?	Y/N	y	Y/N	y	
Embedded Track?	Y/N	n	Y/N	n	
Aerial Structure?	Y/N	n	Y/N	n	
Barrier Present?	Y/N	n	Y/N	n	
Intervening Rows of Buildings	number	0	number	0	

Furthermore, the contribution to the worst-case receptor, (number 2, "West of Multi Purpose Hall") as seen in Table 3 at 44.2 dBA CNEL has a max Leq-h of 46.3 dBA as stated on Page 15 of this report last sentence of the second paragraph, would have a logarithmic addition of approximately 48.7 dBA Leq-h and would be not be considered an impact.

Predicted Vehicular Noise Levels along Adjacent Roadways

The results showing the effect of traffic noise increases on the various servicing roadway segments associated with the proposed Saint Adelaide Catholic Church development are presented in Tables 5a through –e for the following scenarios:

Table 5a) Existing Site Conditions (County Criteria)
Table 5b) Existing + Project

Table 5c) Existing + Project + Cumulative Site Conditions (County Criteria)
Table 5d) Project Related Traffic Noise Increase
Table 5e) Cumulative plus Project Related Traffic Noise Increase

For each roadway segment examined, the worst case average daily traffic volume (ADT) and observed/predicted speeds are shown along with the corresponding reference noise level at 50-feet (in dBA). Additionally, the line-of-sight distance to the 60 and 65 dBA CNEL contours from the roadway centerline are provided as an indication of the worst-case unobstructed theoretical traffic noise contour placement.

TABLE 5a: Existing Site Conditions Scenario (County Criteria)

Roadway Segment	ADT	Speed (MPH)	SPL	CNEL Contour Distances (feet) 65 dBA Contour	60 dBA Contour
SR-94					
Tecate Rd to Forest Gate Rd	2,450	55	65.2	52	164
Forest Gate Rd to Buckman Spr Rd	2,050	55	64.4	43	137
Buckman Spr Rd to Sheridan Rd	2,150	55	64.6	45	144
Sheridan Rd to White Star	2,150	55	64.6	45	144
Buckman Springs Road					
I-8 to SR-94	2,616	55	65.4	55	175
Sheridan Road					
SR-94 to Jeb Stuart Rd	447	55	57.8	9	30

Notes:
- PHV = Peak Hour Volume - Source: Darnell and Associates, 4/04.
- SPL = Sound Pressure Level in dBA at 50-feet from the road edge. CNEL = Community Noise Exposure Level.
- All values given in dBA CNEL. Contours assumed to be line-of-sight perpendicular (⊥) distance.

TABLE 5b: Existing + Project Conditions Scenario (County Criteria)

Roadway Segment	ADT	Speed (MPH)	SPL	CNEL Contour Distances (feet) 65 dBA Contour	60 dBA Contour
SR-94					
Tecate Rd to Forest Gate Rd	2469	55	65.2	52	165
Forest Gate Rd to Buckman Spr Rd	2050	55	64.4	43	137
Buckman Spr Rd to Sheridan Rd	2174	55	64.6	46	145
Sheridan Rd to White Star	2159	55	64.6	46	144
Buckman Springs Road					
I-8 to SR-94	2635	55	65.5	56	176
Sheridan Road					
SR-94 to Jeb Stuart Rd	499	55	58.2	11	33

Notes:
- PHV = Peak Hour Volume - Source: Darnell and Associates, 4/04.
- SPL = Sound Pressure Level in dBA at 50-feet from the road edge. CNEL = Community Noise Exposure Level.
- All values given in dBA CNEL. Contours assumed to be line-of-sight perpendicular (⊥) distance.

TABLE 5c: Existing + Project + Cumulative Site Conditions Scenario (County Criteria)

Roadway Segment	ADT	Speed (MPH)	SPL	CNEL Contour Distances (feet) 65 dBA Contour	60 dBA Contour
SR-94					
Tecate Rd to Forest Gate Rd	2,629	55	65.5	56	176
Forest Gate Rd to Buckman Spr Rd	2,085	55	64.5	44	139
Buckman Spr Rd to Sheridan Rd	4,188	55	67.5	89	280
Sheridan Rd to White Star	2,339	55	65.0	49	156
Buckman Springs Road					
I-8 to SR-94	4,941	55	68.2	105	331
Sheridan Road					
SR-94 to Jeb Stuart Rd	870	55	60.7	18	58

Notes:

- PHV = Peak Hour Volume - Source: Darnell and Associates, 4/04.
- SPL = Sound Pressure Level in dBA at 50-feet from the road edge. CNEL = Community Noise Exposure Level.
- All values given in dBA CNEL. Contours assumed to be line-of-sight perpendicular (⊥) distance.

TABLE 5d: Project Related Traffic Noise Increase

Roadway Segment	Existing (SPL)	Existing plus Project (SPL)	Project Related Difference (SPL)
SR-94			
Tecate Rd to Forest Gate Rd	65.2	65.2	0.0
Forest Gate Rd to Buckman Spr Rd	64.4	64.4	0.0
Buckman Spr Rd to Sheridan Rd	64.6	64.6	0.0
Sheridan Rd to White Star	64.6	64.6	0.0
Buckman Springs Road			
I-8 to SR-94	65.4	65.5	0.1
Sheridan Road			
SR-94 to Jeb Stuart Rd	57.8	58.2	0.4

Notes:

- SPL = Sound Pressure Level in dBA at 50-feet from the road edge. CNEL = Community Noise Exposure Level.
- All values given in dBA CNEL. Contours assumed to be line-of-sight perpendicular (⊥) distance.

TABLE 5e: Cumulative plus Project Related Traffic Noise Increase

Roadway Segment	Existing (SPL)	Existing plus Project plus Cumulative (SPL)	Project Related Difference (SPL)
SR-94			
Tecate Rd to Forest Gate Rd	65.2	65.5	0.3
Forest Gate Rd to Buckman Spr Rd	64.4	64.5	0.1
Buckman Spr Rd to Sheridan Rd	64.6	67.5	2.9
Sheridan Rd to White Star	64.6	65.0	0.4
Buckman Springs Road			
I-8 to SR-94	65.4	68.2	2.8
Sheridan Road			
SR-94 to Jeb Stuart Rd	57.8	60.7	2.9

Notes:

- SPL = Sound Pressure Level in dBA at 50-feet from the road edge. CNEL = Community Noise Exposure Level.
- All values given in dBA CNEL. Contours assumed to be line-of-sight perpendicular (⊥) distance.

As can be seen from the traffic data, the largest cumulative plus project noise increase would be 2.9 dBA CNEL along Sheridan Road, which is below the 3.0-dBA significance thresholds. Therefore, no impacts either cumulative or project related are expected. All other roadway segments are also below the normally accepted impact threshold of 3.0-dBA.

Expected Outdoor Operational HVAC Noise Levels

The proposed church development anticipates the use of approximately 16 HVAC units ranging in size from 4 to 10/20 tons (i.e., Carrier 48HJ005 - 024 or smaller, refer to attachments) for Phase I, II, and III and would be ground-mounted. Operation of HVAC equipment would be expected to comply with the property line standards identified in Table 1 above. HVAC operations were assumed to run continuously (Worst-Case) and were modeled with a sound rating of 76-84 dBA at three feet as indicated within the product specifications.

Utilizing the ISE *IS3* noise field model, a rectangular grid of receptor points within the vicinity of the HVAC units were created with the resultant radiated sound level calculated at each point. The results are shown as a color contour plot of the radiated HVAC noise superimposed atop the proposed structural shell. The model input deck is provided as an attachment to this report. The worst-case noise output contours as well as the HVAC locations and property line noise levels are identified in Figure 6 below.

The color-shaded areas represent areas of equal noise exposure within the roofline and surrounding property and are a composite of the 106,276 data points generated by the computer model. Based upon these findings, the proposed project would need minor mitigation measures in the form of walls around the HVAC equipment in order to comply with the County's 45 dBA residential property line noise standards. Table 6 identifies the tonnage at each location identified in Figure 6 of each.

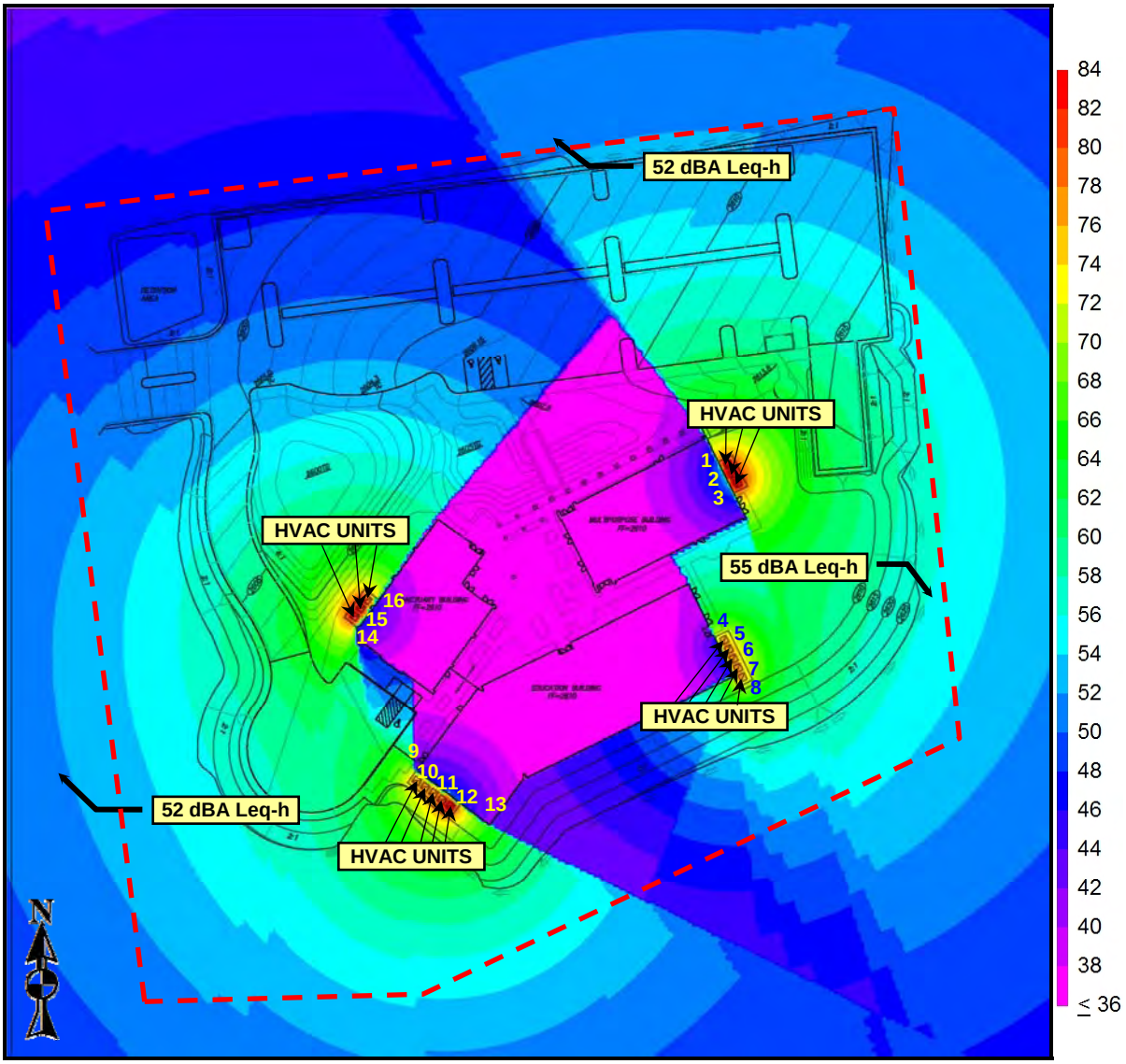


Figure 6a: Unmitigated HVAC Noise Exposure Plot for Worst-case (ISE, 9/06)

Two five foot and two six foot masonry/brick mitigation walls should be constructed in order to mitigate HVAC noise at the proposed Church for all phases; As stated in the project description the masonry enclosures will also have a steel metal gate that will provide more attenuation. The models below were modeled with no gates for worst-case property line scenarios (north P/L, west P/L). The resultant outputs are shown in Figure 6b-c below. The walls should be placed as follows:

- **Phase I** - A five-foot wall around the HVAC units for the multi-purpose hall.
- **Phase II** - A six-foot wall around the HVAC units for the sanctuary.
- **Phase III** - A six-foot wall around the HVAC units for the west side of the education building and a five-foot wall around the HVAC units for the east side.

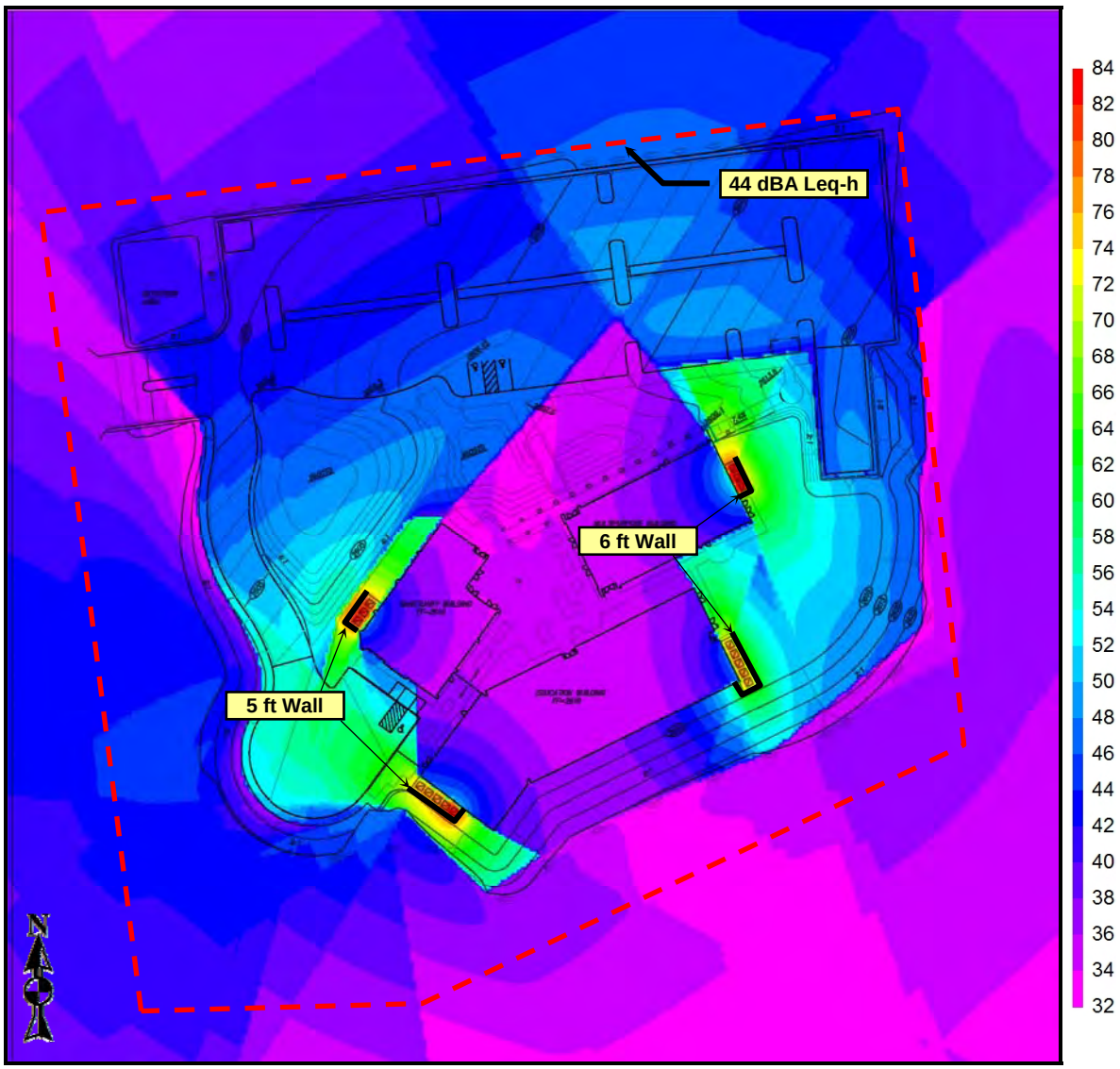


Figure 6b: Mitigated HVAC Noise Exposure Plot for North Property Line (ISE, 9/06)

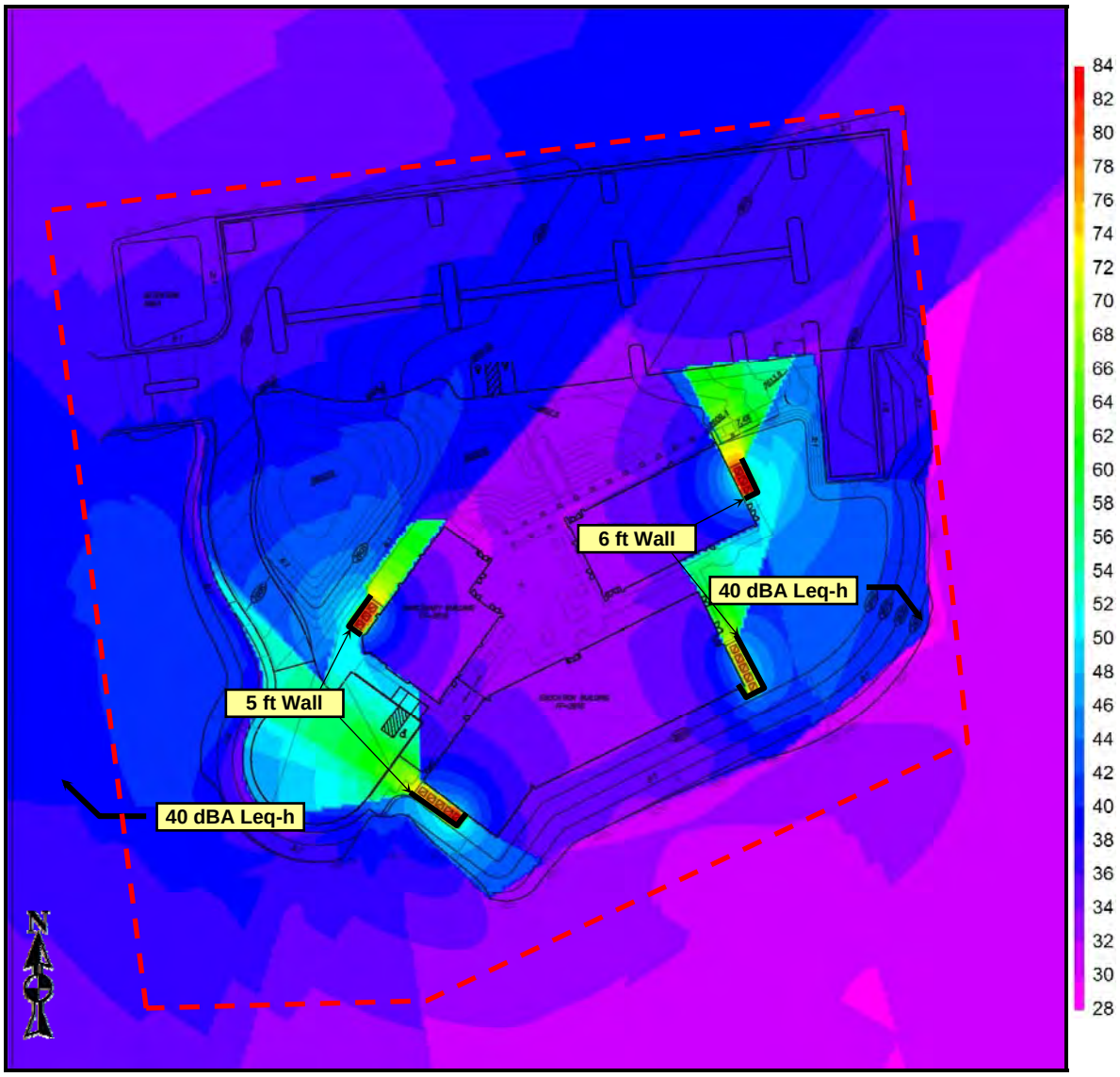


Figure 6c: Mitigated HVAC Noise Exposure Plot for West Property Line (ISE, 9/06)

TABLE 6: HVAC Identification Chart

Location	Nominal Capacity (Ton)	Location	Nominal Capacity (Ton)
1	7.5	9	4
2	10	10	4
3	10	11	4
4	4	12	4
5	4	13	10
6	4	14	6.5
7	4	15	8
8	4	16	8

Predicted Onsite Noise Levels

Onsite noise sources of concern would not be generated from outdoor activities until the completion of the education building (Phase III) within the designated turf area. As stated in the project description the school will have two 40-minute recesses dividing the number of possible noise sources by two during a given hour. It could be expected that approximately 113 children will be within the designated turf/play area during recess. ISE modeled the children at the geographical centroid of the play area which would represent a stochastic (random) model which playgrounds typically are. ISE assumed an average sound level of 60 dBA noise source at 50 feet which is conservatively consistent for playground noise uses. Leq corrections for the 67% playground duty cycle were not considered. At the county's request the following scenario was also recalculated with the pre-existing HVAC noise.

An ISE IS3 noise prediction model was used to facilitate the calculations for this noise source to the surrounding area. Modeled results for concerned property lines are shown in Figure 8a-c.

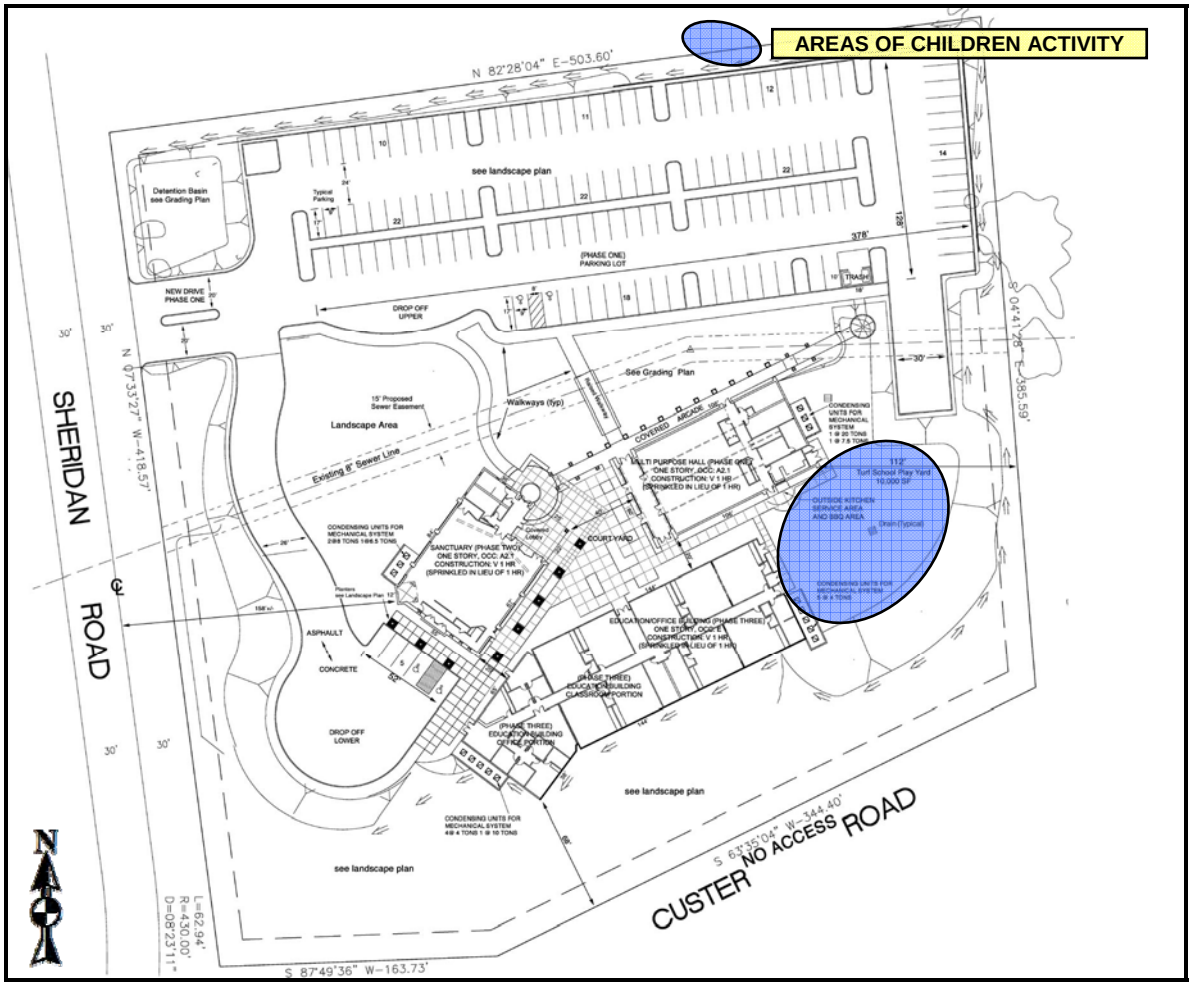


Figure 7: St. Adelaide Catholic Church Anticipated Play Area, Phase III

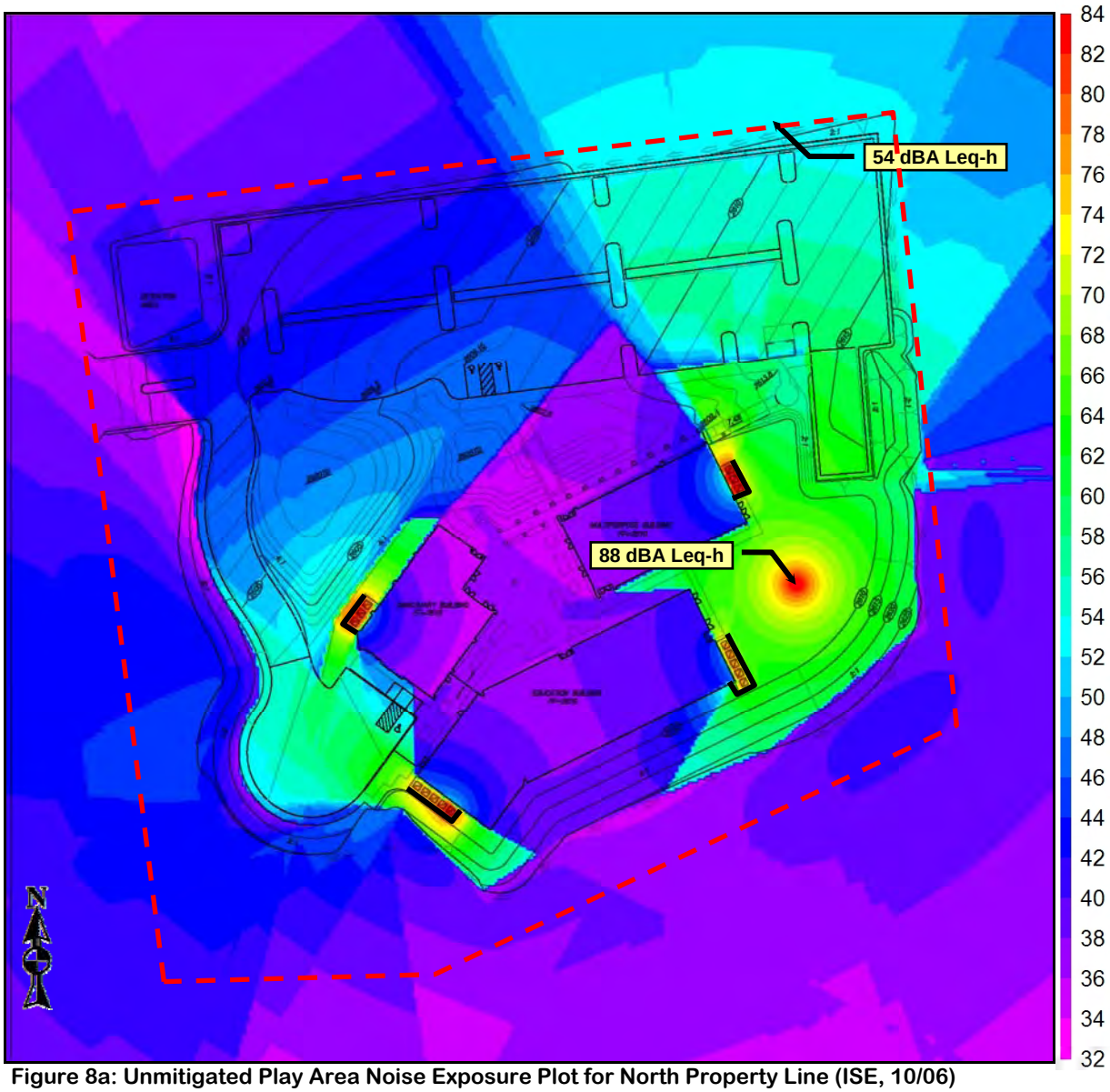


Figure 8a: Unmitigated Play Area Noise Exposure Plot for North Property Line (ISE, 10/06)

The following mitigation is only required for the site to meet the County's noise ordinance, 50 dBA Leq-h threshold until the last phase, phase 3. A proposed mitigation plan consisting of one wall, which slopes from Four-Feet to Nine-Feet along the top slope of the parking lot closest to the play area, was found to effectively mitigate noise levels at both the north property line and southeast property line to 48 and 44 dBA Leq-h. The recommended placement of this barrier along with the corresponding Bottom of Wall elevation (BOW) and Top of Wall elevation (TOW) is shown in Figure 8b-c below.

The barrier should be of solid construction (i.e., such as earthen berm, masonry block or glass or any combination).

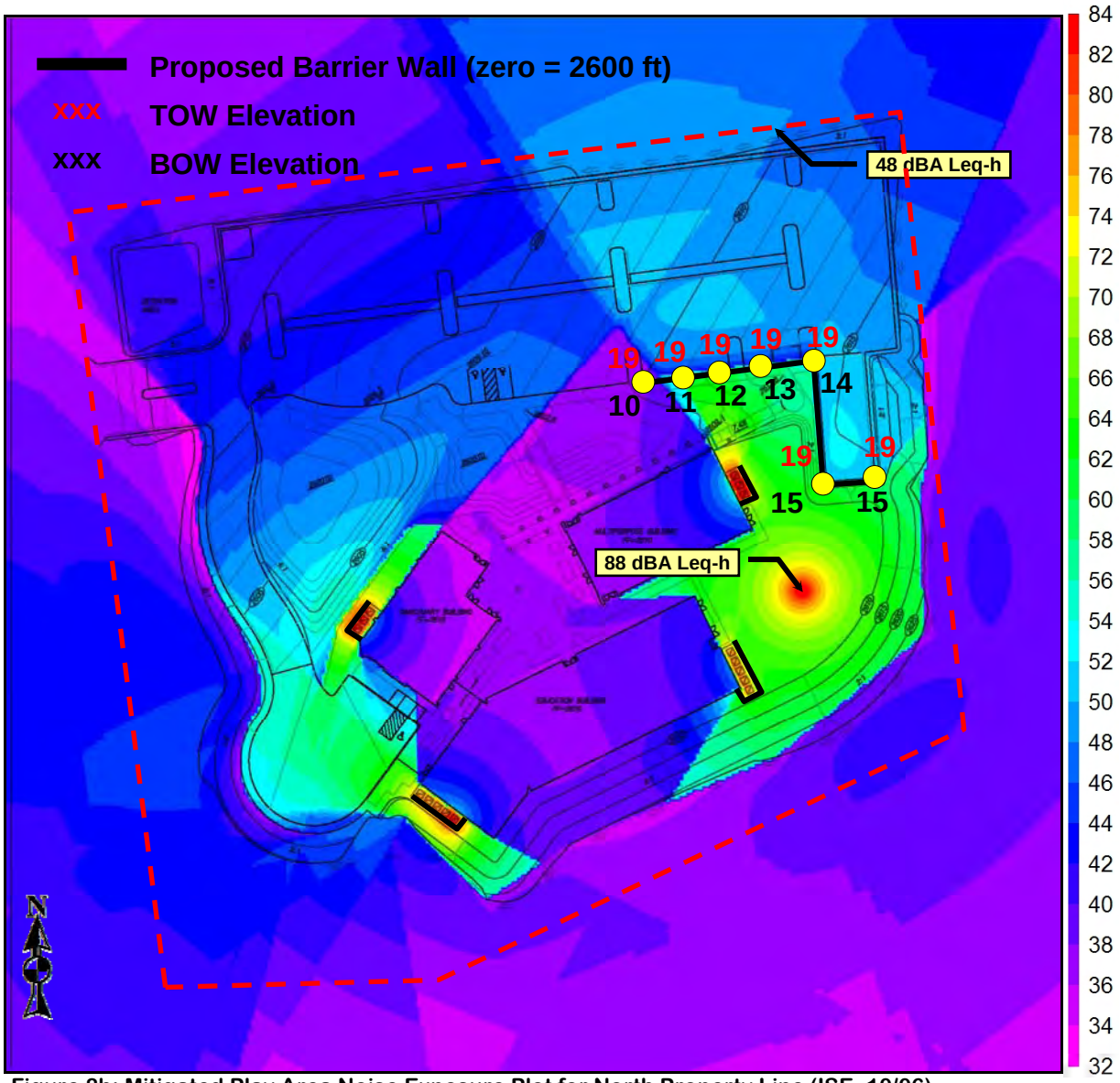


Figure 8b: Mitigated Play Area Noise Exposure Plot for North Property Line (ISE, 10/06)

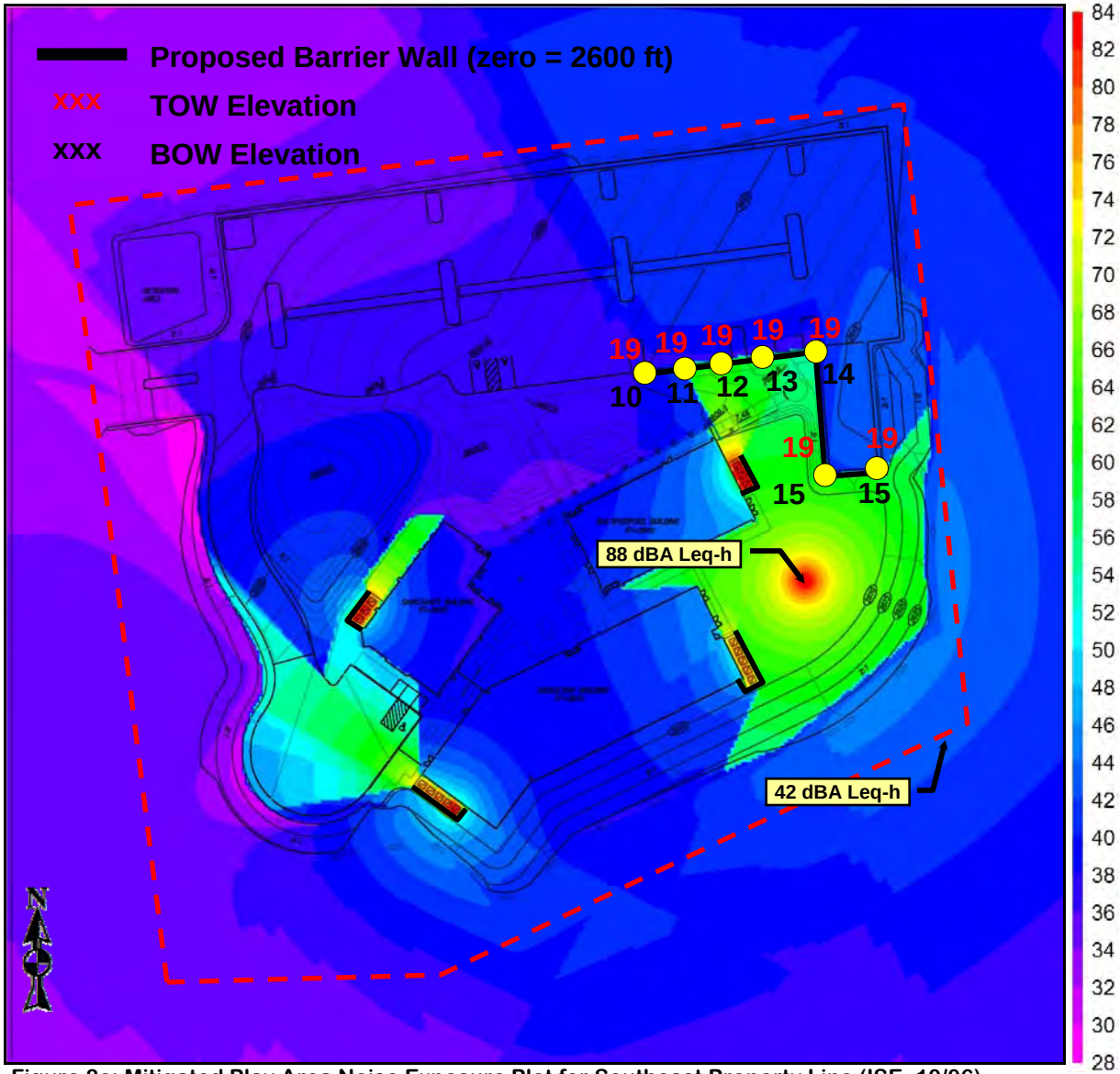


Figure 8c: Mitigated Play Area Noise Exposure Plot for Southeast Property Line (ISE, 10/06)

Based upon the findings, the proposed project is expected to comply with the City's 50 dBA daytime property line noise thresholds. Therefore, no residential impacts are expected.

Should you have any questions regarding the above conclusions, please do not hesitate to contact me at (858) 451-3505.

Sincerely,

Rick Tavares, Ph.D.
Project Principal
Investigative Science and Engineering, Inc.

Cc: André Estrada, ISE
Ryan Taylor, ISE

Attachments: Sound32 Model Input/Output Decks
IS3.1 Input Deck
HVAC Specifications Sheets (Carrier, 2005)
11” x 17” Plot Plan/Mitigation Summary